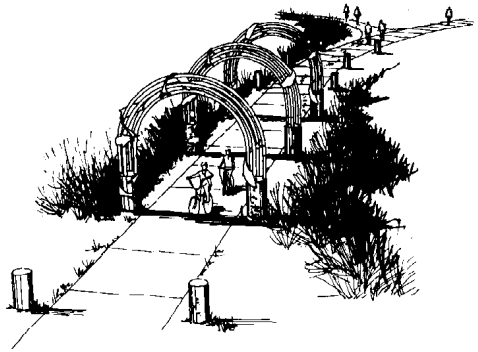
Appendix A: Design Elements Components & Standards



Design Elements: Components and Standards

Note: The following guidelines are conceptual and are not construction level drawings or specifications. A qualified Landscape Architect and/or engineer must be consulted to prepare any designs or drawings for construction on a site-by-site basis.

This chapter provides standards for the basic components and amenities that will comprise the Lower Valley Colorado River Trail. The standards are based on commentary at LOVA Group planning meetings, agency and partner input, public participation and guidance by the consultants. It is the intent of the plan that these standards be adhered to as closely as possible as the trail and river corridor improvements develop. The plan includes the following design and planning components:

- Trails and Bike Routes
- Boating and Fishing Facilities
- Resource Conservation Areas

1. Trails and Bike Routes

Definition and Purpose

Four categories of trails and trail facilities are identified for purposes of this plan:

- **Multi-Use Trails**—The multi-use trail system will form the spine of an interconnected off-street system following the Colorado River corridor serving biking, hiking, jogging, in-line skating, horseback riding, wheelchair touring, cross country skiing and other non-motorized uses. The multi-use trail system will also link to trail networks in the cities and towns and connect to other regional trail systems such as the Roaring Fork and Glenwood Canyon trails, ultimately forming a county-wide and state-wide network. The trail will have a warmtone concrete surface.

- **Loop and Primitive Trails**—These are natural, soft surface trails designed primarily to accommodate hikers, equestrians and all-track/mountain bikers. Cross-country skiers may use these trails as well. These are generally side trails that access natural areas or other attractions peripheral to the main spine multi-use trail.

- **On-Street Bike Routes**—On-street routes include highways, service roads and local streets suitable for bicycle use. They are used for recreational bicycle touring and bicycle commuting and may link regional and local trails and trail segments together. The on-street system will provide interim links between the off-street multi-use trail segments until a continuous off-street system is completed. The off-street system will also remain in place permanently to accommodate higher speed touring bicyclists. On-street routes may have defined bike lanes or a "bike route" designation. Note that design requirements for on-street bicycle usage will vary depending on traffic speed and volumes, grades, parking and other factors. Planners and engineers should consult the *Guide for the Development of Bicycle Facilities* and *A Policy on Geometric Design of Highways and Streets*, both published by the American Association of State Highway and Transportation Officials (AASHTO).

- **Trail-Related Amenities and Furnishings**—These are the accessories, amenities and components that support the use and enjoyment of the trail system including trailheads, rest areas, interpretive signage and other furnishings.

A. Multi-Use Trail Components and Standards

Trail Surface

1. Built on a compacted, properly graded surface meeting state and national design standards. (Refer to American Association of State Highway Transportation Officials AASHTO guidelines).

Paved Trail, Glenwood Springs

Warm Tone Trail, Littleton, CO

2. Trail treads adequate width (minimum 10' wide, upgradeable to 12' wide) with 2.5' to 5' wide shoulders and headroom (8.5' to 10' with horse use) to accommodate multiple uses.

3. Trail surface and all structures such as bridges should be adequate for a 12,000-pound vehicle.

4. Surface is warmtone (Frank Davis Omaha Tan or similar), broom finished concrete with saw cut control joints.

5. Trail is constructed above the 5-year flood level unless inundation is infrequent and of short (less than several hours) duration.

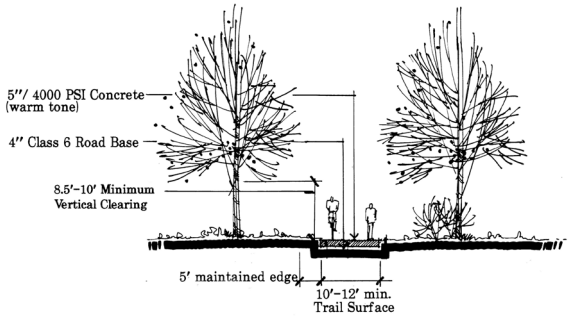
6. No dead ends or dangerous barriers such as busy highways.

7. Grade-separated and buffered from street traffic.

8. Located in attractive corridors.

9. Easy to find with attractive, highly visible trailheads, rest areas, benches, water fountains, toilets, interpretive signs, published mapping and public information, and other amenities.

10. Signage is provided at entry points informing users of trail distances, level of difficulty, accessibility information and user responsibilities and laws. Signs also identify street crossings and mile marks.



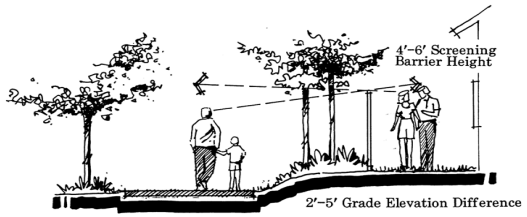
Paved Trail Concept

11. In certain special locations such as where the trail intersects with intensive pedestrian uses, it may be advisable to provide a special textured surface such as pavers to identify a special area and promote slower speeds. Specially scored concrete could also be used for bicycle speed reduction areas.

12. The trail should have good surface drainage that will minimize puddles and washouts including a 1% to 2% cross slope. Plan for uniform sheet flow of run-off water across slopes that are vegetated to minimize erosion.

13. Readily accessible to area users including meeting standards under the Americans with Disabilities Act (ADA).

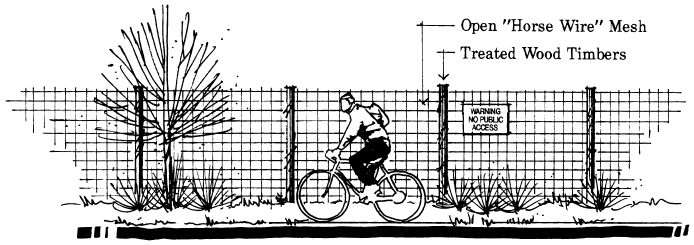
14. Meanders sensitively through the landscape with adequate buffer zones provided between trail and environmentally vulnerable areas and sensitive land uses such as residences, to ensure preservation of environmental integrity and privacy.



Trail with Privacy Screening Concept

15. Connects to local trails, parks, and other attractions.

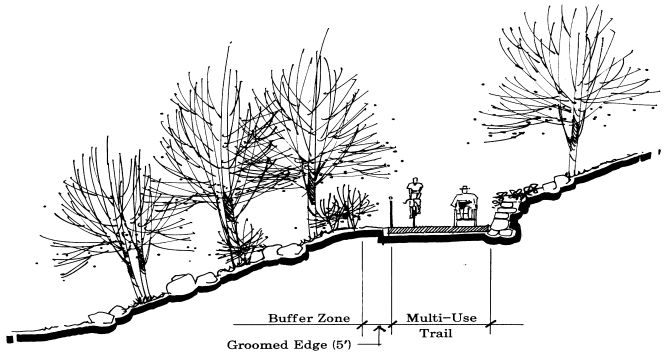
16. Extended grades in excess of 5% are avoided.



Horse Wire Fence Concept

17. Constructed to be durable and easy to maintain.

18. Attractive interface including landscape buffering from adjacent land uses.



Trail with Retaining Wall

Bridges, Tunnels and Underpasses

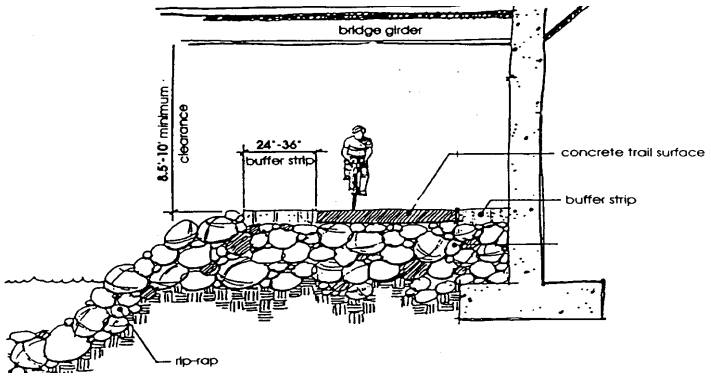
1. Pedestrian and automobile Bridges should be designed to convey the 100-year storm event.

2. It is recommended that only clear-span crossings be utilized, avoiding center pier.

3. Allow a minimum of 8'6'' of head clearance for all trail underpasses. If equestrians will use the underpass there should be 12' of clearance. If the trail underpass is subject to frequent inundation, it may be necessary to provide a floodwall or raise the trail thereby reducing head clearance to the minimum of 8'6". In such cases a warning sign giving head clearance for equestrians should be provided.

4. Wheelchair accessible ramps should be provided at bridge crossings to provide both access and alternative routes if the underpass is inundated. Ramps, however, should not lead users into potentially hazardous situations such as unsafe crossings of high volume streets or highways.

5. The trail surface should be adequately anchored to the bed of the river to avoid washout.



Typical Trail Underpass Concept

6. All bridges and underpasses should have room for the multi-use trail with wheelchair accessible ramps to street grade.

7. Underpasses should also accommodate migration by large mammals such as deer and elk.

8. Tunnels should be a minimum of 12'-wide and painted a light color.

9. There should be a clear line of sight all the way through the tunnel before entering.

Tunnel Concept

10. Adequate illumination should be provided in the tunnel if ambient light does not provide clear and distinct visibility all the way through the tunnel

Trail Decking and other Structural Elements

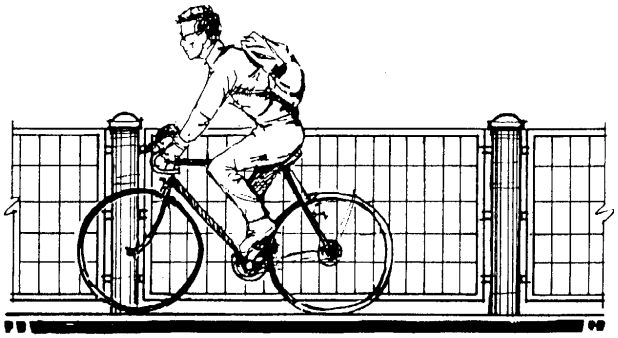
Handrailing

1. Minimum 42" (44" preferred) handrailing should be provided if drop-offs exceed 18" within 30" of the trail edge or other hazards are perceived. Handrailing should also be provided if a two-way trail is within 5' of a vehicular traffic lane.

2. If the drop-offs exceed 18", openings in the handrailing should be designed so a 4" diameter sphere will not pass through.

3. The handrail should withstand a 250 lb. load with 1/2" deflection with a w=50 pound per linear foot transverse and vertical load capacity.

4. The handrail should not present sharp or protruding edges and ends should be flanged to reduce the chance of collision.



Handrailing Section Using Woven Wire Panels

B. Loop and Primitive Trail Components and Standards

1. Built on a compacted, properly graded earthen surface.

2. Trail built on decking over sensitive or unstable areas.

Primitive Trail, Chatfield State Park

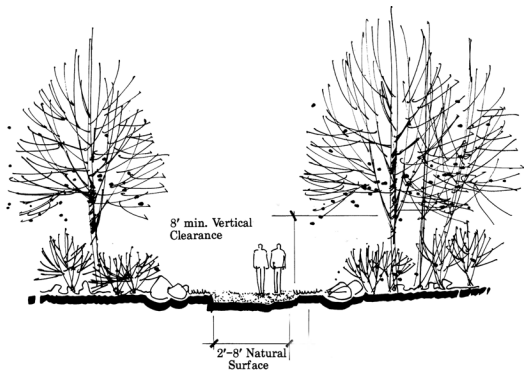
3. Avoids conflicts with sensitive wildlife or private property areas.

4. Adequate width (1.5' to 8' wide) and vegetation is trimmed to a prism of 8' to 14' wide and 8' high—depending on trail tread width.

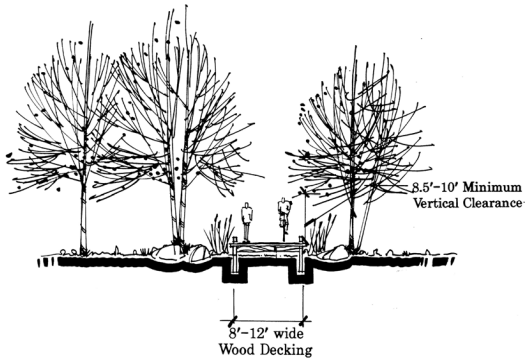
5. Grade-separated and buffered from street traffic.

6. They are readily accessible to local users including, wherever feasible, meeting "challenge" standards under the Americans with Disabilities Act (ADA).

7. Signage is provided at entry points informing users that trail is primitive and may not meet AASHTO standards for certain uses. Trail map, accessibility, user responsibility and interpretive signage may also be provided.



Primitive Trail Concept



Trail on Decking

8. There is an attractive interface including landscape buffering, with adjacent development.

C. On-Street Bike Route Components and Standards

1. Designs conform to current AASHTO and other applicable standards.

2. Except on very low speed, low volume local streets, provide a minimum 14'-wide traffic lane without a curb and a 15' wide lane (width totals 14' plus 1' curb pan) when a curb is present where parking is not permitted. On steep grades or where there are obstructions such as drainage grates a lane width of 15' is preferred. In some challenging scenarios such as very low volume local and unpaved street, lane width might be narrower where bikes and autos share the full land width. (consult a traffic engineer with bicycle expertise).

3. If a designated bike lane is provided delineate with a 6"-wide solid white line. The bike lane should be at least 4'-wide and h 5'-wide or greater where substantial truck traffic is present or speeds exceed 50 mph (Refer to AASHTO guidelines).

4. Has minimum 12'-wide parking/bicycle travel lane where parking is permitted with an additional 1'-2' where parking volume and turnover is high (Refer to AASHTO guidelines).

5. "Share the Road" yellow diamond-shaped signs with bicycle icon and green "bicycle route" signs are posted along on-street routes at appropriate locations (refer to Manual of Uniform Traffic Control Devices).

6. On-street routes are identified with signage and guide maps.

7. Drain inlet grates are designed so they do not catch bicycle wheels.

D. Trail Related Amenities and Furnishings

Trailheads and Access Points

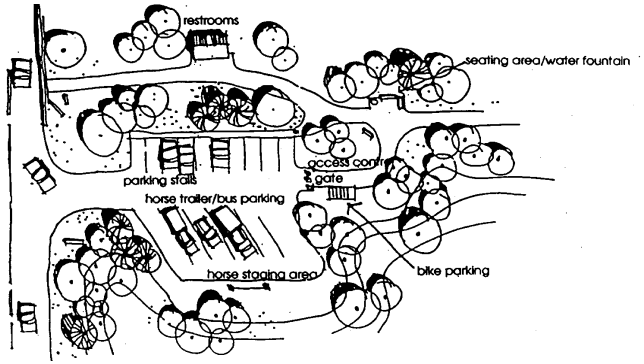
Trailhead and access points serve automobiles, bicycles, pedestrians, wheelchairs, equestrians and other users seeking access to the trail system. The trailheads serve as gateways for trail uses, boaters and anglers. They also serve as mini-parks and rest areas with picnic

facilities, water, and toilets. The facility is designed to accommodate users arriving by auto as well as those who arrive on foot, bike, boat or other means.

1. Adequate gravel parking area with curb stops (15 to 100 spaces depending on location)

2. Provides informational and way-finding signage including " You Are Here" marker, degree of difficulty, disabled access and distance information, and list of trail user responsibilities.

3. Accommodates vans, buses and horse trailers as well as cars and should include at least one parking and loading space adequate for disabled users (12.5' wide with disabled user parking symbol).



Typical Trailhead Plan Draft

4. Natural landscaping with shade trees

5. Includes sun/storm shelter

6. Designed using "Park Service Rustic" style architecture using grouted cobblestone and wood elements.

Example of Park Service Rustic Style Architecture

7. Trailheads/access points should not be located directly adjacent to residences or other uses where there might be a conflict or security problem.

8. Access points should include access control that admits maintenance and emergency vehicles but not other motorized vehicles.

Rest Areas and Overlooks

Rest areas and overlooks should be provided at regular intervals along the trail. Several kinds of rest areas could be offered including: rest pads, standard rest areas, overlooks, and trail pavilions. All rest areas and overlooks should be designed to move users off the main trail to eliminate any possible traffic hazard.

1. Rest Pads can consist of a 10' x 10' stopping point just off the trail with a simple bench and perhaps informational or donor credit signage. These should be located every 1/4 to 1/2 mile depending on grade. Per Americans

with Disability standards a 60"x 48" level landing or rest pad should be provided on ramps exceeding 5% every 400'.

2. Standard rest areas should be located every one to two miles and should include a crushed stone or concrete pad with benches, an informal bike rack, informational signage and, perhaps, a drinking fountain.

3. An overlook is a special kind of rest area tied to a view of special interest such as a wildlife area. In addition to the standard rest area features, an overlook would likely include interpretive signage describing the area being viewed.

4. Storm shelters may be necessary along long open expanses of trail. These should be designed to provide cover from lightning (with appropriate grounding devices), hail and heavy rain where other cover is not available. They could be incorporated into rest areas.

Rest Area, Littleton, CO

5. A trail pavilion is a more developed site that might include benches, picnic tables, parking, possibly a shelter and more extensive trail and interpretive information. These would be located at key trailhead, access and activity points

Park and Feature Areas

Park and feature areas are the more formally developed areas and amenities along the Colorado River Corridor. These are more likely to be located in the cities and towns such as Two Rivers Park in Glenwood Springs. These areas are likely to include turf grass areas, picnic shelters, paved parking, and other more formal recreational facilities.

1. Sites should have suitable topography and soils for formal development and usage.

2. There should be adequate on-site parking to accommodate the programmed uses for the park or feature area.

3. Toilets should be accessible to people with disabilities and meet Americans with Disabilities (ADA) design standards.

4. Park development should be compatible with, and carefully protect and enhance existing natural, scenic historic and cultural values of the Colorado River corridor.

5. Park and feature sites should be compatible with and buffered from adjacent properties to avoid conflicts.

6. Buffer the river bank and drainageways from turf grass areas and parking lots with natural areas to help absorb run off of landscaping chemicals and other potential contaminants.

Trail Edge Landscaping

It is a goal to preserve and enhance the existing natural landscape along the Colorado River and its tributaries wherever practical. In a number of places, vegetation trimming or additional trail edge landscaping will be appropriate.

1. Generally, landscaping should use indigenous, wildlife-supporting materials and species. The landscaping will both supplement the native vegetation that grows—or once grew—in the area and will help screen nearby development, business and industrial activities.

2. Wildflower plantings can also enhance the trail edge. Planting can serve as a visual buffer between the trail, sensitive areas and adjacent properties. Where appropriate to the setting, a mixture of evergreens and deciduous trees might be recommended to provide both winter and summer greenery.

3. The effects of microclimates (the impact of sun, shade, and wind in the immediate area) should be considered when planting trees and shrubs. Generally, deciduous trees should be planted on the south side of the trail to provide shade in summer while allowing the sun to shine through during winter months when the trees have shed their leaves. Evergreen trees are preferred on the north side of the trail to provide a windbreak, yet not shade the trail so the winter sun can melt snow and ice from the surface.

4. Landscaping must consider trail safety and security. Thick brush may need to be trimmed back in places along the trail edge to provide good visibility and prevent hiding places.

5. Generally, on multi-use trails, clearing and grubbing of vegetation should be trimmed and maintained to a width of 4-5' beyond the edge of the trail surface and provide head clearance of 10' feet. Selective thinning for security should extend 9' or more beyond the trail edge depending on local conditions.

6. The impacts on flood levels from any vegetation planted throughout the corridor should also be considered. Vegetation planted in areas where flooding may threaten public and private property should be such that it will lay flat and not excessively back up water during flood events. It should also be maintained to ensure adequate growth of the root structure that will stabilize soils and anchor the plant material.

Toilet and Drinking Water Facilities

1. Chemical or composting toilet facilities are recommended.
2. Toilet facilities should be located at all major access points and recreational areas.
3. Spacing between toilet facilities should not exceed 5 miles.

Chemical Toilet Concept (Sized to be Wheelchair Accessible)

4. Toilet facilities should be housed in architecturally appropriate facilities and property screened and buffered from adjacent private properties.
5. Drinking water should be available at all major trailheads/access points.
6. Directional signage should be provided indicating the location and directions to convenience stores and other commercial "way-stations" where food and drinks may be purchased.

Signage, Interpretive and Wayfinding System

A number of informational, educational, interpretive and way-finding devices are recommended for the trail corridor. These include:

Safety Signs—These signs address trail user and on-street bicycle safety. For ease of understanding, these signs should follow standard formats for traffic control devices (See *Manual of Uniform Traffic Control Devices*). The following sign types exist within the safety category:

Traffic control—include stop, yield, and curve in trail.

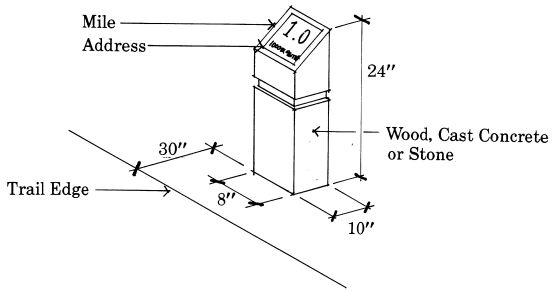
Warning signs—include, but may not be limited to: "slippery when wet", "bicycles slow to walking speed", "icy conditions may exist", and hazard panels for possible trail obstructions or dangerous objects within the trail right of way. Surface texture may be another way to promote bicycle speed control in busy area.

Miscellaneous safety signs—these include specialty safety signs such hazard markers and signs near water features.

On-Street bicycle signs and pavement markings—including bike route signs, share the road caution signs, bike lane and bike turn lane marking and other necessary traffic control devices that integrate bicycle and motorist traffic. On-street signs and graphics must conform to the Manual of Uniform Traffic Control Devices (MUTCD) standards.

Information signs—These signs provide travel information to trail users. The following signs are considered in the information sign category:

Directional signs show trail users how to reach their destinations, distance from a destination, and location signs such as mile markers, and street signs placed on bridges to identify cross streets.



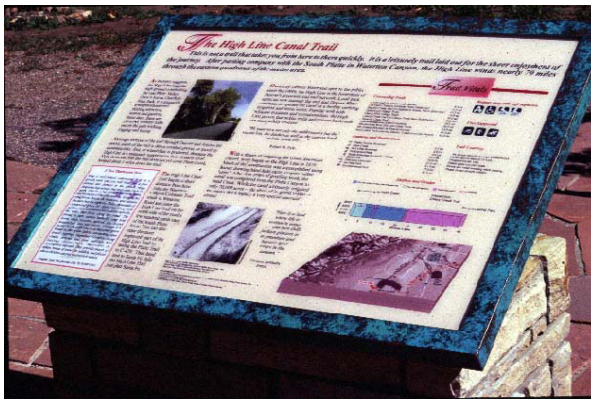
Mile Marker Concept

System signs are used at major entry points of the particular trail and/or trail system. They address comprehensive issues such as system-wide trail maps, location of rest areas, degree of difficulty, accessibility and system trails rules and regulations. Due to the amount and importance of the information conveyed on system signs, it is best to place them in locations where users are encouraged to safely stop and review the information represented.

Credit signs—that provide information about those who contributed to the development of the trail and/or amenities along the trail.

Interpretive signs and displays—addressing natural and/or cultural features. Important topics include ecological and geophysical interpretation and history.

Artistic and sculptural displays—includes sculpture, graphics, mosaics, and other artistic amenities.



Wayfinding Display, Littleton, CO

Signage and Wayfinding System Standards

This is an attractive, distinct, uniform system of signs, displays and possibly artistic elements that guides and informs both local and out-of-town users of the trail system. The system is comprehensive and runs along the length of the river corridor. The system includes entry monuments, gateway information signs with maps, safety and accessibility information, directional signs, traffic and safety signage, mile markers, interpretive signs, displays, artistic/sculptural elements and artifacts.

1. A consistent style and informational system is provided throughout the Colorado River corridor and associated connecting trails.

2. Signage and wayfinding facilities should be designed for easy use and comprehension including people with disabilities per the Americans with Disabilities Act.

3. Gateway signs are provided at major entry points and include a map of the system, degree of difficulty and accessibility information, estimated travel times, user safety and courtesy guidelines, emergency contact and user feedback telephone numbers and web sites, Leave No Trace information and other pertinent information.

4. Structures are designed and built for easy repair and maintenance.

5. Mile markers area provided every ¼ mile for user guidance, locating maintenance problems and emergency reporting.

6. All safety and regulatory signs must conform to the Manual of Uniform Traffic Control Devices (MUTCD) standards.

7. All signs and displays should be located a minimum of 36” (to inside edge of sign) from the edge of pavement to avoid hazard to trail users.

8. All signs should be durable, easy to read and conform to a uniform design theme consistent with other trail sign systems in the area. Non-safety signs should include a Colorado River Trail or LOVA logo.

Sign usage should be minimal—as needed to meet safety, informational and interpretive objectives to avoid visual clutter.

Typical Yield Etiquette Sign

Boating and Fishing Facilities

Definition and Purpose

The goal of the boating program is to facilitate access and continuous navigation of the length of the Colorado River through Garfield County for non-motorized craft (rafts, canoes, dories, kayaks and other paddle craft). The system is designed to accommodate novice and intermediate boaters as well as commercial tours depending on flow conditions. Recommended improvements include removal or modification of hazardous obstacles such as diversion structures, obstructions and snags to promote safe water recreation. The boating corridor also includes boat launch and landing facilities with parking and support facilities. Other improvements include white water kayak courses, slalom competition facilities and challenge rocks placed strategically in the river. Designed properly, boating improvements such as river and streambed modifications can benefit aquatic life and fishing by improving water quality and habitat.

Proposed fishing improvements include fishing access, accessible fishing trails in popular fishing areas, and stream channel improvements to improve fish habitat.

Boating Facilities Standards

1. Need to maintain adequate flows for boating use—minimum 9" of flow depth.

2. Remove, modify, or provide well-marked portages around all hazardous structures.

3. Provide marking of difficult or potentially hazardous rapids, obstructions or objects.

Boat Chute Through Dam, Littleton

4. Assure adequate clearances under bridges during ordinary and seasonal high flows.

5. Provide well-marked put-ins and landings with support facilities such as information signage, boat and raft unloading areas, toilets and parking.

6. Avoids conflicts with anglers especially in popular fishing areas.

7. Avoids conflicts with sensitive wildlife or private property areas.

8. Provide "boater trails" (a way to carry a kayak or tube back up to the top of a popular white water run or practice area).

9. Make facilities readily accessible to local users including, wherever feasible, meeting standards under the Americans with Disabilities Act (ADA).

10. Signage should be provided at entry points with "boating route" map, accessibility, user responsibility, safety and interpretive information.

Fishing Facilities Standards

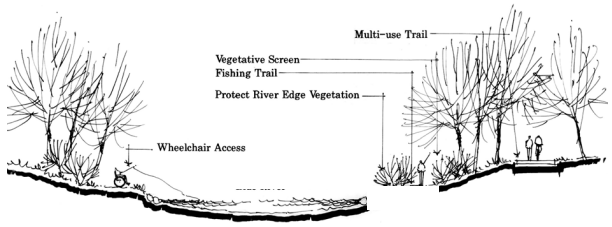
1. Need to maintain adequate flows for game fish habitat—cold-water trout fishery above Rifle and warm water fishery below Rifle.

2. Fishing trails (provided in popular fishing areas) should be natural, soft surface trails (1.5' to 3' wide) designed to accommodate anglers moving along the edges of popular fishing areas along river, tributary streams and pond banks. Fishing trails should be designed to preserve and minimize damage to stream-edge vegetation. They should be built on a compacted, properly graded earthen surface and separated from multi-use paths and set back from the water's edge to avoid damage to aquatic habitat.

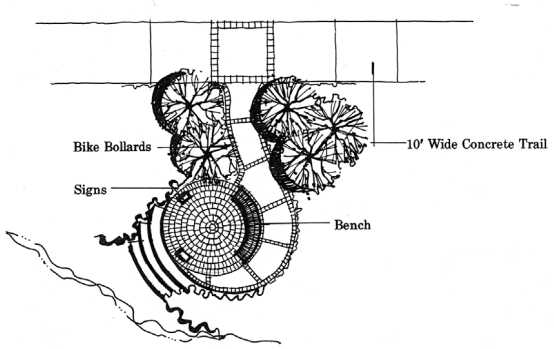
3. Fishing improvements should be designed to avoid conflict with adjacent properties.

4. Readily accessible to local users. Wherever feasible there are fishing pads that meet standards of the Americans with Disabilities Act (ADA).

5. Signage should be provided at entry points informing users of the sensitivity of fishing habitat as well as angler rules, courtesies and responsibilities.



Fishing Trail Cross Section



Rest Area/Water Access Concept

Resource Conservation Areas

Definition and Purpose

Resource conservation areas identified for purposes of this plan perform a number of important functions. These include:

- **Infrastructure**—serves a specific community safety or welfare purpose such as a river or stream and related lands for the conveyance and storage of flood water, aquifer recharge, protection of steep or erosion-prone slopes, unsuitable soils for

building, wetlands, ponds and other necessary natural functions. These are sometimes referred to as primary conservation areas or de facto open space in that they are lands not suitable for development for public safety or health reasons. Infrastructure open space may also include canals, utility rights-of-way, and noise attenuating buffering zones along major highways. Infrastructure open space may be publicly or privately owned property.

- **Core Reserves**—protects significant natural habitat, agricultural lands, visual or historic values. They are generally deep rather than narrow and linear. They are large enough to sustain and support diverse plant and animal populations, including large mammals such as deer and elk. LOVA should work with the Colorado Division of Wildlife to define dimensions (case by case) for potential core reserve properties along Colorado River corridor.

Boat Chute, Englewood

- **River and Riparian Protection**—This includes the river and associated riparian lands that support important wildlife and river resource protection functions. For planning purposes, this area is defined as the area where development and other human activities could directly and adversely impact the benefits of stormwater storage and conveyance, water quality, aquifer recharge, wildlife, recreation and aesthetics. Ideally, it should contain the 100-year floodplain and include the river (or stream) low-flow channel, related riparian areas along the banks and a buffer zone. Generally, this area should extend at least 300 feet from either side of the centerline of the river. This area may be in either public or private ownership.

- **Agricultural/Ranching**—includes agricultural and ranching lands with irrigated meadows or open cropland, and grazing areas.

- **Hunting**—includes lands that attract and support game species, such as duck, that are set aside for hunting.

- **Historical/Cultural**—historic, cultural or social aspects of these lands should contribute or have the potential to contribute to the corridor's historical and cultural identity. These lands might be publicly or privately owned with a preference for private ownership.

Agricultural Ranching Land Near Silt

- **Buffers**—natural and undeveloped lands that separate and reduce the impacts of development. They also define the boundaries of urbanized areas, preventing urban sprawl and strip

development, and contribute to the rural mountain quality of the local landscape. They occur along the margin of greenways, rivers, creeks, core reserves, trail routes, agricultural/ranching lands, hunting areas and other open spaces. Buffers help protect natural resources, water quality, and wildlife habitat. They also help avoid land use conflicts and protect privacy and security of properties adjacent to open spaces. Buffers may also serve to separate various land uses such as residential areas and roadways. Buffer lands may be publicly or privately owned property.

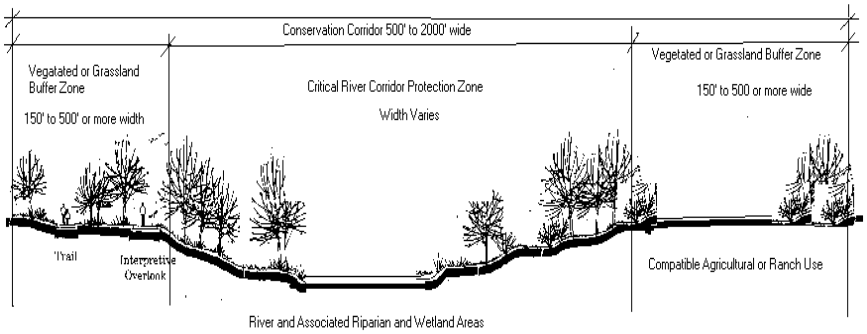
- **Linkage**—lands adjacent to publicly held (or in some cases privately held) property that meets open space criteria and that could be combined with other open space properties to enlarge and/or connect existing open space parcels into a continuous system.

- **Recreational and Aesthetic**—offers significant recreational or scenic value, particularly passive uses not requiring intensive maintenance or management. These areas may offer high aesthetic appeal and variety within major view corridors. They may protect or enhance the visual integrity of a scenic backdrop. These lands are generally visible, apparent, and appreciated by residents as well as visitors and whose preservation is important to maintaining the rural mountain character and appearance of Garfield County and the Colorado River Corridor. This space may be publicly or privately owned depending on the use.

- **Unique Lands**—possess unique values such as outstanding scenic quality, rare flora, riparian quality, wetlands, critical wildlife habitat, fragile areas or unusual geologic or topographical formations. These may be publicly or privately owned.

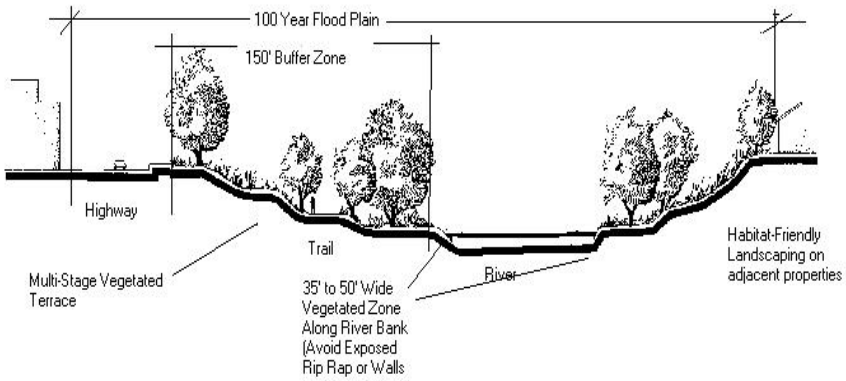
Resource Conservation Area Standards

1. Define an overall protection cross section for the Colorado River and tributary stream corridors that includes the 100-year floodplain and associated riparian and buffer lands. All activities proposed for this area should be carefully reviewed by planning and management agencies to ensure compatibility with managing agency plans and policies.

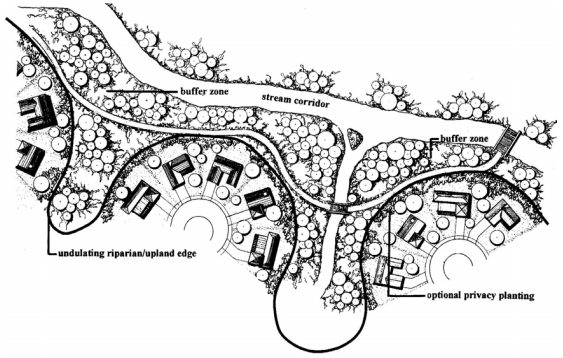


River and Stream Protection Cross-Section Concept

2. Define an optimal urban and developed area cross section that reflects a best effort to integrate necessary developed uses such as buildings and highways with river or stream corridor storage and conveyance, wildlife habitat, wildlife migration and aesthetics. It is terraced with a mixture of forest and grasslands. With the exception of the trail, development does not encroach into this area.



Optimal River Cross Section for Developed Areas



Greenway Interface with Adjacent Development

3. Protect sensitive habitat along the river and creek corridors. Provide a wildlife-friendly cross section that provides for wider buffering of environmental preserve areas. A wildlife expert should be consulted to determine specific locations and limits of sensitive habitat preserve areas. Human intrusions should be kept to a minimum including keeping trails along the outer edges. At select locations, interpretive overlooks can provide views and information about wildlife. Adjacent property owners should be encouraged in publications such as homeowner's guides and covenants to plant wildlife-friendly landscaping on their properties to help enhance the resource. In some locations, islands may be deliberately created to provide places of sanctuary for wildlife.

4. Promote a compatible interface between adjacent development and the river corridor with adequate buffer zones and vegetative screening of adjacent uses. Avoid windowless walls, solid screen fences, chain link fencing, unscreened outdoor storage, loading docks, trash receptacles and other incompatible uses along the edge.

5. Protect and buffer important core reserves along the Colorado River Corridor of adequate size to accommodate the objective wildlife functions including wildlife habitat, breeding areas and routes of movement and migration. These areas are not generally accessible by the public and trails are limited or non-existent though there may be opportunities for guided visits and tours where appropriate.

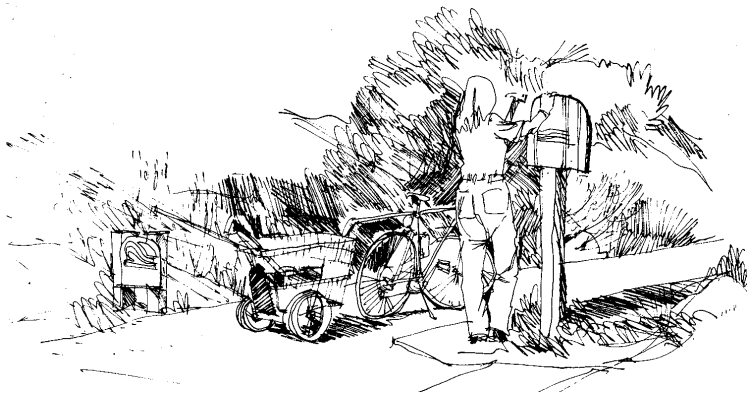
6. Protect areas of visual or cultural significance protected through acquisition or cooperative public/ private efforts. They may be publicly (in fee simple or through conservation easements) or privately owned and protected through cooperative agreements or as part of subdivision land dedication.

7. Protect and buffer hunting areas with adequate land and riparian resources to attract and support waterfowl. Provide enough distance and screening between blinds and waterfowl areas to avoid unintentional flushing, distraction of hunters or hazard to trail users. Generally, 150 to 200 yards of buffering should be provided with vegetative screening. Dogs should not be permitted in the hunting areas except for hunter's retrieval dogs. Areas of still water around blinds should be given at least a 40-

yard birth by canoeists passing through. Warning signs should be posted at boat launches and when entering active hunting areas indicating the season dates and alerting boaters of hunting activity, to wear orange safety vests and to avoid disrupting water fowl.

8. Promote the preservation of agricultural and ranching lands along the river corridor. Accomplish this by identifying and maintaining agricultural parcels of viable size that include quality soils and adequate water to support ranching and agricultural activities. Work with farmers and ranchers to avoid conflicts between public recreational use such as trails and agricultural/ranching activities. Also preserve access and circulation systems necessary for agricultural/ranching activities which may include herding livestock on public roads.

Appendix B: Management Plan



1. Operations and Maintenance Functions

A well managed trail and resource system is critical to the long-term success of the LOVA (Colorado River) Trail and Stewardship Corridor. Good operations and maintenance begin with sound design, durable components and a comprehensive management plan. The plan should be embraced by the responsible entities at the beginning of the implementation process. Programs and protocols should be instituted—including training of field and supervisory personnel—that will endure over the long term. This chapter provides the guidelines for instituting the management program and provides some of the specific operations and maintenance functions and standards. It also addresses agency roles and funding strategies.

- **Facilities Managed and Maintained**
  1. The Multi-Use Trail
  2. Associated Loop and Primitive Trails
  3. The River Channel and Related Riparian Areas
  4. Associated Resource Conservation Areas (such as wetlands)
  5. Boating and Fishing Access Facilities and Fishery
  6. Trail Related Corridors (landscape and resources such as adjacent river banks)
  7. On-Street Bike Routes
  8. Trail Related Amenities, Furnishings, Park and Feature Areas (integral to the trail system)

- **Functional Areas of Management, Operations and Maintenance**
  1. Maintenance—Routine and Remedial
  2. Stewardship, Education and Enhancement
  3. User Safety and Risk Management
  4. Programming and Events
  5. Oversight and Coordination

Routine and Remedial Maintenance Defined

Routine Maintenance refers to the day-to-day regime of trail sweeping, trash and debris removal, weed control, tree and shrub trimming, ice or snow removal and other regularly scheduled activities. Routine maintenance also includes minor repairs and replacements such as fixing cracks and potholes or repairing a broken handrailing.

Remedial Maintenance refers to correcting significant defects as well as repairing, replacing or restoring major components that have been destroyed, damaged, or significantly deteriorated during the life of the project. Some items ("minor repairs") may occur on a five to ten-year cycle such as repainting, seal coating asphalt pavement or replacing signage. Major reconstruction items will occur over a longer period or after an event such as a flood. Examples of major reconstruction/remedial maintenance include stabilization of a severely eroded hillside, repaving the trail surface or replacing a footbridge. Remedial maintenance should be part of a long-term capital improvement plan.

Stewardship, Education and Enhancement refers to the preservation and maintenance of the scenic, ecological, and cultural values of the trail corridor. It also includes educating the public about these resources. Activities include review of proposed public and private development such as utilities, roadway modifications or crossings, encroachments, land development and other activities that might compromise the character of the trail system and its associated natural resources. Stewardship includes monitoring environmental conditions and long term enhancement programs such as landscaping and habitat restoration. Stewardship and enhancement should also pursue protecting the interests of adjacent landowners, tenants and businesses from adverse impacts of the trail on privacy, business operations and security.

User Safety and Risk Management includes patrol by law enforcement and community service organizations such as "trail rangers" (including establishment and posting of user responsibilities and regulations), emergency response protocols for police and fire/rescue, and reporting and documentation of accidents, crimes

and incidents. This item also includes design review, problem identification and feedback and response mechanisms to remedy or avert potentially harmful situations**.**

Programming and Events addresses policies and management of special events such as bike tours, races, tree plantings and festivals as well as proposals for commercial and concession activities. Programming also includes on-going educational, community involvement and stewardship activities such as docent training, classroom visits, "adopt a trail" service by school children and college students and engagement of youth, seniors and volunteer groups.

Oversight and Coordination calls for effective administration including coordinating the various participating agencies, training both supervisory and field personnel, updating maintenance manuals, raising funds for operations and maintenance, conducting regular inspections, quality control and prompt follow-up on user complaints and needs. This should be handled by a permanent entity with the authority to oversee and coordinate all management responsibilities.

2. Guiding Principles for An Effective Management Program

The trail and greenway system should be viewed and maintained as a public resource. Indeed it will become *infrastructure* similar to the road system or utility networks serving the community and visitors to Garfield County for generations to come. The following guiding principals will help assure the preservation of a first-class system:

- Good Maintenance begins with Sound Planning and Design.
- Foremost, Protect Life, Property and the Environment.
- Promote and Maintain a Quality Outdoors Recreation Experience.
- Maintain Quality Control and Standards and Conduct Regular Inspection.
- Maintain an Effective Responsive Public Feedback System and Promote Public Participation.
- Be A Good Neighbor to Adjacent Properties.
- Operate a Cost-Effective Program with Sustainable Funding Sources.

3. Operations and Maintenance Tasks

Multi-Use Trails

- Inspection
- Trail Surface Maintenance
- Sweeping
- Fixture and Furnishing Repair
- Vegetation Management
- Erosion Control
- Litter and Trash Removal
- Repair Trail Structures
- Toilet Facility Service
- Remedy "Social Trails" (such as shortcuts)
- Address Detours/Disruptions
- Patrol and Security Services
- Accident and Incident Data Tracking
- Maintain Related Park and Feature Areas

The River Channel, Related Riparian Areas, Boating and Fishing Facilities

- Stream Channel/Riverbank Maintenance
- Remedy Social Trails
- Maintain Portage Trails
- Erosion Control and Bank Maintenance
- Water Quality and In-stream Flow Monitoring
- Streamside Vegetation Management and Restoration
- Management of Fishery and Waterfowl Resources including Stocking Programs
- Remove Debris and Snags
- Trash Removal from Access Sites
- Monitoring Filling and Dumping
- Monitor Dam and Weir Construction
- Pest Management

- Maintain Safety and Regulatory Signage
- Patrol and Security Services including Rescue and Fishing Law Enforcement

Associated Natural Resource Conservation Areas (such as wetlands)

- Vegetation Management including Weeds and Invasive Plants
- Waterfowl and Hunting Regulation
- Monitor Dumping and Filling
- Fire Prevention
- Litter and Trash Removal
- Pest Management
- Patrol and Security Services

On-Street Bike Routes

- Street Surface Upkeep and Repair
- Sweeping and Snow Plowing (where feasible)
- Repaving and Pavement Overlays
- Signage and Striping
- Vegetation Management
- Education and Enforcement
- Address Detours/Disruptions
- Accident and Incident Data Tracking

4. Cost of the Management Program

Estimate of Annual Management Costs

Cost planning should take into account routine maintenance and remedial maintenance over the life cycle of the improvements and on-going administrative costs for the program. Annual costs vary depending upon the improvements to be maintained, the level of use, location and standard of maintenance. A survey of programs nationwide yields the following anticipated cost ranges:

Annual Operations and Maintenance Costs

- **Trail and Related Amenities**

Crew sizes range from 4 to 10 full-time employees (FTE's) per 10 miles of greenway corridor. Annual routine maintenance costs range from less than $ 4,000 to over $10,000 per mile. Because of the predominantly rural character the Colorado River Trail Corridor, annual management is estimated at the lower end of this range using a figure of $ 2,000 to $ 6,000 per mile per year.

Remedial costs are estimated at $4,000 to $7,000 per year per mile (amortized annual cost) based on repaving every 40 years and a 100-year life for other major components such as bridges, retaining walls, culverts, etc. This is a long-term deferred maintenance cost not an annual cash requirement.

- **Boating/Fishing Facilities**

This includes boat chutes, portages, channel improvements, fish stocking, maintenance of signage and removal of snags and debris. Annual maintenance costs for the boating/fishing facilities is estimated at $200 per river mile. A 25-year life is assumed for boating facilities when estimating remedial costs. Amortized remedial costs are estimated at $10,000 annually for the 50-mile corridor assuming $250,000 in depreciable boating/fishing improvements.

- **On-Street Routes**

This is assumed to be part of the existing road maintenance program by state, local and county crews.

- **Conservation Areas**

Maintenance of natural open space costs between $ 60 and $ 1,000 per acre per year to maintain. The higher figure reflects mowing four times per year. Again, because of the predominantly rural character, a budget of $60 to $100 per acre per year is assumed. No remedial costs are assumed.

- **Trailheads/Fishing & Boating Access Points**

Formal turf grass park and feature areas are estimated at $ 4,000 per acre. Rural/primitive sites are estimated at $1000 per acre. For planning purposes a standard one-acre site is assumed to include parking for 20–50 cars, a boat launch/dock, 4 picnic tables/grill set-ups, a waterless (composting or chemical) toilet, trash receptacle, informational signage and native landscaping. No remedial costs are assumed.

5. Administration and Jurisdictional Responsibilities

Overview of Inter-Agency Cooperation

The Colorado River Trail and Corridor system will extend through five municipalities as well as unincorporated Garfield County. Additionally, there are a number of federal, state, community, user groups and business entities that have a role or an interest in the management of the corridor.

Initially, principal management responsibility will lie with the appropriate public agencies and jurisdictions. At some time in the future, a private non-profit organization might take on an increased role in the care of the corridor. A key objective of this plan is for these entities to work together in an effective multi-objective program. This will call for coordination, advocacy and leadership. There are several potential governance models that could work. These include:

- Management by a county agency
- Management by a special district entity
- Cooperative management by the individual municipalities
- Management as a State Parks facility
- Management by a private non-profit in cooperation with public entities
- Combinations of the above models

Management by County Agency

Garfield County could create a maintenance department and fund operations through County revenues, user fees, contributions by the municipalities or some combination of these sources.
Note that the County does not currently have a parks department and that maintenance would likely fall under the auspice of the Roads Department. Presumably, the Sheriffs department would also play a role in the form of patrol.

Advantages
County may have some of the staffing and equipment capability in place. County jurisdiction covers the entire corridor.

Disadvantages
Would impose a new cost on the County and require either the creation of a new department or significant modification of an existing department.

Management by a Special District

Through an election, a special district with taxing authority would be created to maintain the river and trail corridor. The district might also manage future acquired open space and park facilities in the area.

Advantages
The district could more efficiently cover the entire corridor. May also be an opportunity to consolidate a number of local park maintenance requirements. This model has been very successful in other locations such as the South Suburban Park and Recreation District in the Littleton area.

Disadvantages
Until a valley-wide need for park and open space facilities is recognized, it may be difficult to win voter support. The special district might be perceived as a loss of local autonomy by the local

cities and towns and my also be perceived as an additional layer of government.

Cooperative Management by the Individual Municipalities

Under this scenario each of the five municipal entities assumes management responsibility for adjacent reaches of the trail corridor or roughly a 10-mile segment each. Management and patrol obligations are handled separately by each jurisdiction along its adopted 10-mile segment.

Advantages

This may be one of easier scenarios to implement using existing staff and equipment in each jurisdiction. No special election or new taxing district would be needed. Each jurisdiction would have more of a sense of local control and "pride of ownership" over its segment.

Disadvantages

May be less efficient use of equipment and personnel. May not have a uniform standard of maintenance quality. May impose an inequitable burden on the smaller communities.

Management as a State Parks Facility

The corridor would be adopted as a State Parks Facility similar to the upper Arkansas River corridor and managed by State Parks. Revenues would come from user fees and outfitter/guide fees. The Colorado Division of Wildlife might also partner in this role managing the wildlife preserve areas.

Advantages

Offers more efficient management of the entire corridor. Draws on the professionalism, staff and equipment capabilities of State Parks. Possible way to bring in outside funding for corridor management.

Disadvantages

May be difficult to win legislative support for a new State Parks facility. Prone to cutbacks in austere fiscal times. Loss of local autonomy over the management of the corridor.

Management by a Private Non-Profit in Cooperation with Public Entities

A non-profit organization is created that takes on the long-term development and management role. The Yakima River Greenway in Washington State is one of the best examples of this model. This is where the LOVA Trails Group could play an important role. Initially this may be a coordinating and advocacy role, which ultimately, as its capability evolves would take on an increasing portion of operations and maintenance responsibilities, perhaps on a contractual basis with the key agencies. The non-profit might also incorporate as a land conservancy trust. Adequate funding for staffing of a non-profit would be important both in the initial coordinating role and in the later expanded role.

Advantages

Offers more efficient management of the entire corridor. Offers a way to effectively coordinate the local, County and State jurisdictions and promote the long-term advocacy of the trail corridor. May also be possible to create an endowment to help assure long-term funding of corridor management

Disadvantages

May be difficult to raise adequate funding to support long-term management costs. Many donors prefer not to fund operations and maintenance. Important to have a public side commitment to management, should the non-profit face financial difficulties.

Combinations of the Above Models

Some combination of the above models might be the most realistic scenario. For example the cites and towns would maintain their

reaches, the County might assist with patrol and maintenance of on-street routes, and the LOVA Committee might act as a coordinating entity and take on a portion of the maintenance function such as providing a bicycle mounted trail ranger patrol and helping to raise money for maintenance equipment.

Advantages
May be the easiest to implement with each jurisdiction and agency contributing a portion of the required resources. Keeps all of the participating entities engaged in the long-term management process.

Disadvantages
Will require advocacy and coordination. May not be the most cost efficient way to manage the corridor.

Planning for Management Coordination

Regardless of the management model selected it is important to plan management functions now and identify who will be responsible for what activities. It will also be important to secure the necessary commitments, intergovernmental agreements and long-term funding sources to be sure the quality and integrity of the corridor is maintained. Initially, the functional areas of management could be allocated as follows:

- **Trails and Greenway Amenities (includes boating and fishing amenities)** Initially, these improvements will be maintained by the appropriate jurisdictional agencies including the local city parks departments and state agencies where applicable. These agencies will work in coordination with the LOVA Committee. LOVA will play a key role in coordinating O&M activities and assisting in raising outside and supplementary funding. Patrol will be by County Sheriff and local police and fire/rescue organizations.

- **On-Street Bike Routes** With the possible exception of way-finding signage and street furnishings, it is recommended that the on-street system be patrolled and maintained by the appropriate local and County streets and roads agencies. A key to success of this will be the establishment and acceptance of on-street bicycle operations and maintenance guidelines and proper training of both supervisory and field personnel in the fine points of on-street bicycle facility upkeep. There should also be inter-agency coordination and user feedback protocols that might include routine inspection and reporting by LOVA or other appropriate oversight agency.

- **Resource Conservation Areas** Depending on jurisdiction, these areas could be maintained by private owners, local towns and cities, the Colorado Division of Wildlife, a land trust or community organization.

- **Park and Feature Areas** These areas are to be maintained by the respective municipal parks agencies or by special districts as appropriate.

5. Funding the Management Program

Several types of funding sources can be identified and it is likely that a combination will offer the best solution**.** Following are potential funding sources:

- Budget Allocations to Current Agency Programs (County, Cities and Towns)
- Multi-Objective Partnerships
- Dedicated Tax and Special District Funds
- Creating an Endowment
- Earned Income
- Outside Funding Sources and Outside Management
- In-Kind Services

Budget Allocations to Current Agency Programs

These funds come directly from existing agency and department programs such as the parks and streets departments as part of annual budget allocations. Typically, this is the base revenue source for project management, operations and maintenance. Note that many private donors or other potential partners will want to see a strong long-term public side commitment to management as a condition of awarding grants for capital trail improvements and management programs.

Multi-Objective Partnerships

Most trails, river corridor and on-street bike routes serve multiple public and private benefits including access for floodway and bank upkeep, utility access, road maintenance and enhancement of adjacent private properties. This may provide a number of opportunities for task sharing and cost sharing among the various beneficiaries including adjacent residential developments, lodging establishments, oil and gas interests, and agricultural/ranching interests. These options should be vigorously and creatively explored.

Dedicated Tax and Special District Funds

This may be a longer-term option as the valley develops. To implement such a program it will be important to have a specific visionary plan in place and build broad based public support and partnerships with park, recreation and open space advocacy groups. Pursuing this process should begin with an examination of the potential property, sales, lodging and perhaps extractive excise tax bases.

Creating an Endowment

An endowment is a set-side account held strictly to generate revenue from investment earnings. The endowment could be held by a non-profit such as LOVA (were they to incorporate and secure tax-exempt status). Funding of the endowment could come from a percent of capital grants and from an endowment campaign. Endowment funds might also come from a development impact fee or excise tax on new development along the river corridor. The endowment could also be funded by bequests and deferred giving such as donations of present or future interests in stock or real estate. To have an effective impact the endowment should have several million dollars invested. This endowment could be built up gradually in tandem with project development.

Earned Income and User Fees

This is a revenue stream created by a trail-related resource, revenue from events or user fees. User fee funding has a long history in other areas, such as hunting licenses and outboard motor fuel taxes that fund game and fishing programs. Colorado State Parks raises approximately $680,000 annually along the Upper Arkansas River through sale of a $2 user permit and a 5% fee assessed against outfitter and guide revenues.

Some private organizations such as the Yakima River Greenway Foundation in Washington earn funds through bingo and special events. Cannon Falls, MN raises funds through a “Wheel Pass “ program where users 18 and older must purchase a user permit providing funds for trails maintenance. Another community near Saratoga, NY, a $35/year membership fee subsidizes trail maintenance. Another option would be leasing trail rights-of-way for fiber-optic and other utility corridors. The Niagara River trail (Canadian side) and the W&OD Trail Corridor in Virginia (Northern Virginia Regional Park Authority) receive several hundred thousand dollars annually in lease revenue for telecommunications cable license fees.

In most cases, however, earned income revenue streams are not likely to fund more than a fraction of the total management costs, though the fraction could be substantial. Note that these programs have an administrative cost. Furthermore, it is also important to avoid compromising or commercializing the quality of the trail.

Outside Contributions or Outside Management

Outside contributions include outside public and private sector grants that can be applied toward management including routine and remedial maintenance. As described above, the corridor could be managed as a State Park facility to secure outside funding.

The recently passed 2002 Farm Conservation Bill might offer some direct and indirect financial opportunities for the upkeep of agricultural lands, rangeland, riparian and wetland stewardship lands held by private owners, land trusts and public agencies. Contact the U.S. Natural Resources Conservation Program (NCRS) or the U.S. Department of Agriculture. Also contact the Land Trust Alliance at **www.lta.org** for further information.

Private contributors might help fund seasonal youth "trail ranger" programs or purchase equipment such as a sweeper. Creation of a trail advocacy/land conservancy non-profit might offer a way to raise money through "membership" donations.

Note, however, that with the exception of remedial projects, generally, private donors are not interested in funding operations and maintenance. Many forms of outside funding may be unpredictable year after year and therefore is "uncontrollable income" State park agency management means relinquishing some local control and State funds may be scarce as well.

In-Kind Services

Management services might be supported and enhanced by available non-cash resources such as volunteers, youth, student labor, user groups (such as angler, waterfowl hunting and bicyclist associations), correctional services and seniors. In-kind support may also include donations of materials and equipment. Consider also adopt-a-trail programs. The corridor might also be eligible for youth programs such as AmeriCorps. The Yakima River Greenway recruited volunteers including seniors to provide trail courtesy services. The Musketawa Trail in Michigan established a formal adopt-a-trail program to help maintain a 26-mile trail and the Nature Center of Pueblo recruits senior citizen volunteers to patrol the Arkansas River Trail.

In addition to supplementing the management program, use of volunteers and in-kind donations can help build coalitions with community groups, engage youth and seniors and attract outside funders. However, volunteer and in-kind participation will likely meet only a fraction of the operations and maintenance needs and funding of these programs may be sporadic. The management program will still need a base of trained professionals and proper equipment. These programs require staff time to coordinate.

While a number of potential funding sources exist it is recommended that initial funding and maintenance service commitments come from the existing municipal and county agencies. At the same time multi-objective partnership opportunities and outside funding sources should be identified and pursued. Longer term, special district, earned income and endowment sources might take on an increasing load and this should be pursued under the auspices of LOVA or a similar organization.

6. Implementing the Management O&M Program

The following actions should be pursued in conjunction with implementation of the trail segments:

- Establish a management coordinating committee with representatives from each of the participating agencies and stakeholders.
- Identify an entity such as the LOVA Trail Committee to provide on-going oversight, coordination and leadership for trail corridor operations, maintenance and stewardship.

- Identify and pursue management funding sources including working with the cities, towns and the County to secure cooperative agreements and funding commitments.

- Based on this plan, pursue development of an easy to use management manual and training program and incorporated procedures into existing and new O& M programs and procedures within the participating agencies. This could include a trail management/greenway "certification" for staff, contractors and others working on the trail corridors.

- Establish a public education, citizen participation program and a feedback phone number and Web address. Agree to and institute an agency response and quality control process.

- Refine an annual O&M budget and pursue the various funding sources as identified.

Appendix C: Funding and Policy Resources

Listing of Funding and Policy Resources

Following is a list of potential funding sources and policy measures that can benefit implementation of the plan. This list should not be interpreted as all-inclusive, since new programs appear while others are reduced or phased out.

Local Funds

Bond Issue—a property or sales tax based bond, established perhaps through the formation of a metropolitan park district or fundraising through other mechanisms such as the sale of certificates of participation tied to future revenues.

Sales Tax—Check current sales tax obligations in Garfield County and refer to Eagle County Eco Plan program as an example.

Lodging Tax—Check current lodging taxes and applicability to Garfield County.

Property Taxes—Depends on revenue capacity and political support.

Development Impact Fees and Excise Taxes—These are fees or taxes assessed on new commercial and residential property. Impact Fees reflect the need for facilities created by new development. By example, the City of Arvada assesses $ 1,000 for a single-family residence and $ 840 for a multi-family unit.

County and Regional Funds

Open Space and Trails Program—Pitkin, Eagle and Summit Counties, Colorado Springs and others fund trails and open space programs through a property tax and/or sales tax levies. By way of example, Summit County has raised $7 million with an open space mill levy and is poised to raise $3 million per year through 2009. Eagle County raises $250,000 to $400,000 annually for trails with a transportation sales tax increment.

Creation of a Lower Valley Park and Recreation Metro District—Creation of such an entity might benefit the trail as well as the other partners by reducing duplication of services and facilities, providing a better funding base for capital projects, programs, operations and maintenance, and providing additional bonding capacity for projects. This approach however, might have to compete for funds with other interests such as schools and open space and might imply local jurisdictions giving up some autonomy over their park and recreation facilities.

Real Estate Transfer Tax (RETT) —This is a tax assessed on the sale or transfers of real estate dedicated to open space, park and trail benefits. The Town of Vail generates $1.3 to $2 million or more annually, with a 1% tax on transfers. Under current State requirements this program is limited to newly annexed areas and subdivisions where there is voluntary approval.

State Funds

GOCO—The Great Outdoors Colorado program has several funding sources available including grants for trails, open space, parks, planning and small projects. Individual grants typically range from $10,000 to $200,000 with grants of several millions of dollars under the *Legacy* Program for projects of statewide interest. ***Contact the State Trails Program at 303-866-3203 or GOCO at 303-863-7522***

Fishing is Fun—Sponsored by the Colorado Division of Wildlife, this program provides matching funds on a 75% CDOW share/25% local share matching basis for habitat improvements, barrier free fishing access, parking, signage and other improvements supportive of fishing. ***Contact Mr. Tom Kroening, District Wildlife Manager 970-468-5848***

Energy Impact Funds—Primarily allocated to communities with a large energy impact fund. Annual amount of $15 million is available statewide. Maximum grant amount runs about $300,000. Park, greenway and trail projects and planning may be eligible. ***Contact Tim Sarmo, Colorado Office of Local Affairs.***

NRDS Program—Funding for remediation of mining impacts. Check for applicability.

Federal Funds

Tea 21 Transportation Enhancement Program—This program runs through 2003 and funds bicycle transportation and pedestrian projects under several categories, including: *Recreational Trails Program; Bicycle Transportation and Pedestrian Walkways;* and *Surface Transportation Program (STP)***.** Funds are available to develop and maintain recreational trails and trailside facilities for motorized and non-motorized recreational trail users. Local match of at least 20% is required. "Soft-match" (credit for donations of funds, materials, services, or new right-of-way) is also permitted. ***Contact Gay Page CDOT Statewide Bicycle Coordinator at 303-757-9982.***

2002 Farm Security and Rural Investment Act—The recently passed 2002 Farm Conservation Bill might offer some direct and indirect financial opportunities for the protection and upkeep of agricultural lands, rangeland, riparian and wetland stewardship lands held by private owners, land trusts and public agencies***. Contact the U.S. Natural Resources Conservation Program (NCRS) or the U.S. Department of Agriculture. Also contact the Land Trust Alliance at www.lta.org .***

National Scenic Byways Program—grants to states for scenic byway programs and related projects (recreational trails have been funded through this program) along roads designated as National Scenic Byways, All-American Roads, or as State Scenic Byways. ***Contact Gay Page CDOT Statewide Bicycle Coordinator at 303-757-9982.***

Land and Water Conservation Fund (LWCF)— Permanent funding for LWCF is pending passage of *the Conservation and Reinvestment Act of 1999* (CARA) that would provide an estimated **$12 to $20** million annually for Colorado to support the creation of National and community parks, forests, wildlife refuges, and open space to guarantee outdoor recreation opportunities and a clean environment. ***Contact Colorado Division of Parks and Recreation, 303-866-3437.***

Rivers, Trails, and Conservation Assistance (RTCA) Program: The Rivers, Trails, and Conservation Assistance Program is a community resource that works with local citizen groups to revitalize nearby rivers, preserve valuable open spaces, and develop local trail and greenway networks. The program does not provide funding; rather it offers expertise to local groups trying to get their project off the ground. ***Contact Duane Holmes, Denver Office National Park Service 303-969-2855.***

Volunteer and Youth Programs

Volunteers for Outdoors Colorado—Organizes trail and land stewardship projects on public lands in Colorado**.** ***Contact Kate Boland, Director, 303-715-1010***

Mountain Bike Organizations—Including the International Mountain Bicycling Association and the Fat Tire Society. ***Contact IMBA 303-545-9011***

Youth Programs—Including programs under the Job Performance Training Act (JPTA) Program for at risk youth. ***Contact NCCC/Americorps 303-844-7439. Also contact Grand Valley High students.***

In-kind Resources—Use of city, county, or donated labor and equipment to build projects.

Military/Corrections Labor—This is the use of military or corrections institution labor and equipment to build projects. ***Contact military bases or Colorado National Guard***

Settlement of Environmental Lawsuits—Proceeds from settlements on lawsuits based on violations of Federal laws, often through the Sierra Club, Earth Justice Legal Defense Fund or similar organization. ***Contact EJDF at 303-871-6996***

Private Sector Grants

Philanthropic Funds—grants from local and national private foundations. In many cases individuals may contribute to a project. ***Contact Community Resources Center 303-623-1540 or www.crcamerica.org***

Corporate Contributions—These are grants of funds or in-kind materials or services by businesses. Companies generally will expect a promotional or advertising benefit commensurate with the grant amount.

Entrepreneurial Partnerships—include special projects such as wetland banks and water storage reservoirs where a business interest has a financial incentive to fund an open space project. ***Investigate local business and potential donors. Also contact Willa Holgate, Big Country RC&D, Glenwood Springs.***

Policies and Regulatory Measures

Local Provisions

Following are policies and regulatory measures that may be applicable. Some of these are already enforced in Garfield County.. Others would require further investigation and action.

Subdivision Regulations—requires developers to submit plans for review and approval. The plans must meet certain engineering criteria as stipulated in zoning ordinances and municipal codes. Communities can require that land unsuitable for development due to flooding, improper drainage, steep slopes, unsuitable soil conditions, utility rights of way and other conditions that may be harmful to public safety, health and general welfare may not be developed unless adequate methods are formulated and approved. Furthermore, the jurisdictions may withhold approval of a subdivision if it is determined that increased stormwater runoff may overload existing downstream drainage facilities. In addition, for cities and towns, developers are required to dedicate land for parks, open space and recreational facilities or make cash-in-lieu-of-land dedication and pay fees for park and recreation facilities. The developer is also required to make certain street and sidewalk improvements. (See local subdivision codes).

Floodplain Ordinances—requires that all structures or land modifications in the designated floodway and floodplain comply with certain requirements. Specifically, a permit is required before any construction can take place in the floodplain. Any encroachment in the floodway is prohibited unless a licensed professional engineer or architect can demonstrate that encroachment will not increase the flood level of the 100-year flood by more than one foot in the floodway fringe and result in no flood level increase in the floodway.

Buffer Zones— requires the developer to dedicate open space and/or setbacks along the edges of stream corridors, wetlands, and other places where potentially incompatible land use may abut. The goals may include preserving water quality, protecting groundwater discharge, attenuating stormwater runoff and other general health, safety and welfare benefits.

Conservation Subdivision Techniques—encourage the developer to plan the property with an emphasis on preserving the natural and cultural resources of the site. The developer is also given the flexibility to "cluster lots" on land more suitable for building in order to set aside more sensitive areas such as floodplains and floodplain buffer areas for open space. The open space could be held by a non-profit land trust controlled by the homeowners affording certain tax benefits. Under such a program the jurisdictions may provide technical assistance as well as certain incentives such as reduced application fees, increased density bonuses, and speedy application review. See Arendt Randall, *Conservation Design for Subdivisions,* Island Press, Washington, DC 1996

Watershed Protection and Storm Drainage Impact Fees— provides for an impact fee based on the square footage of impervious surfaces such as those created by roads or rooftops. The funds are earmarked for storm drainage facilities including acquisition of open space (including stream corridors, wetlands and ponds) for stormwater storage and conveyance.

Dedication/Density Transfers—allow the dedication of greenway corridors or open space by the transfer of density to other portions of the property or to contiguous land that is part of a common development plan. The greenway or open space may be deeded to a city, town, or county or be owned and maintained by a property owners association. While the overall density of the development remains the same, development may be clustered onto smaller lots. Some communities also allow the transfer or sale of density bonuses to other developers or locations.

Conservation Tax Credit Program—In 1999, the Colorado Legislature passed a bill permitting landowners who forgo development and gift to a land trust or public agency, the development rights on their property, the right to receive up to a $100,000 tax credit. The credit can be spread over a period of up to 20 years.

Colorado Natural Areas Program (CNAP)—Through the Colorado Division of Wildlife, this program helps private landowners and public land agencies identify and protect land with special wildlife habitat values. Protection is through voluntary cooperative agreements. Small grants are sometimes available. The Division of Wildlife can also acquire wildlife conservation easements.

Federal Policies and Regulations

Clean Water Act—Section 404—probably the most powerful and effective non-local regulatory tool. Permits are required when a project will disturb wetlands defined *as jurisdictional waters of the U.S.* Related programs such as the *Wetlands Reserve Program* and *Conservation Reserve Program* promote the preservation of wetlands on agricultural properties.

National Flood Insurance Program (NFIP)—The Federal government will provide for flood hazard insurance to property owners in communities that meet guidelines set by the Federal Emergency Management Agency (FEMA). This provides a strong incentive for communities to write and enforce floodplain protection ordinances. FEMA has also created a *community rating system* that provides an insurance premium reduction if communities go beyond the minimum requirements.

The Endangered Species Act (ESA)—The ESA is designed to protect the wrongful killing or injury of wildlife. Court decisions have also broadened this interpretation to include the protection of

wildlife habitat and movement routes under certain conditions, including potential impact on Federally listed threatened or endangered species. If the presence or potential presence of listed species is indicated, private and public land developers are obliged to prepare critical habitat and recovery plans for any identified listed species. If the U.S. Fish and Wildlife Service accept plans, a permit may be issued to alter habitat and possibly impact some listed wildlife. If no permit is issued, than penalties may be imposed or legal action by citizens upheld in court with substantial damage settlements.

Land and Right of Way Acquisition Techniques

Note: Colorado has a Recreational Use Statute (RUS) (Sec.33-41-101 thru –105, C.R.S.) meaning that the liability of property owners and adjacent property owners who grant right-of-way for recreational purposes is limited. An attorney, however, should be consulted to determine current status of the law.

Fee Simple Purchase—includes the entire "bundle" of rights in perpetuity—usually the most costly acquisition

Easements—a conveyance of certain, but not all, rights associated with a property. Several types of easements may be applicable here including: *public access* **(**i.e. for trails**);** ***conservation*** *(*to protect natural resources, floodplain or water quality values); and ***preservation easements*** (to protect historic integrity or values of a property) or combinations thereof. Many easements may allow the owner to continue his use of the property for compatible purposes such as farming and some easements may allow the owner to restrict public access. In some cases, a community may simply purchase the development rights.

Donation/Bargain Sale/Tax Incentives—A willing property owner conveys the property or interest in property as a charitable contribution or at a less than fair market value price (bargain sale). The donor may be eligible for Federal, State and local tax deductions and may be able to avoid inheritance taxes, capital gains or recurring property taxes. In some cases, the owner may donate a future interest in the land or retain a life tenancy allowing the donor to remain on the property, use the property, or take income from the property for the remainder of their life or lives. Bargain sale savings may count toward local match on Federal grants under the 2002 Farm Bill.

Option, Lease-Option or First Right of Refusal—This is an agreement with the owner to secure the right to acquire the property in the future. This protects the land in the short term until funds are found to make the purchase. Variations on this might include transaction through a third party such as a land conservancy or The Trust for Public Lands, where the third party buys and holds the land on a public entity's behalf. The community might make rent payments or installment payments on the property over an extended period of time.

License or Revocable Permit —A property owner grants the right to use the property (usually a trail right-of-way) for a period of years (usually 25 yrs. or more). In the case of a revocable permit, the grantor may terminate the right of use or access under certain conditions. Examples include the right for a trail to pass through a State Highway right-of-way or through a property where the owner is hesitant to grant permanent access.

Cooperative Partnership Land Management—Certain public agencies may choose to cooperate and partner in the pursuit of mutual land management benefits. Under this scenario, public land managers agree to manage the land for multiple objectives such as conservation, land treatment of wastewater, wetland banking, joint use recreational/ maintenance trails and water quality benefits. These might be implemented through short and long term intergovernmental agreements.